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SLIDER WITH TEMPERATURE RESPONSIVE TRANSDUCER POSITIONING

ABSTRACT OF THE DISCLOSURE

A device for reading and recording magnetic data includes an aerodynamically supported slider with an air bearing surface, and a transducer mounted to the slider for movement toward and away from the air bearing surface responsive to changes in the slider operating temperature. In one embodiment, the transducer movement is primarily due to a difference in thermal expansion coefficients between a transducing region of the slider incorporating the transducer, and the remainder of the slider body. In another embodiment, a strip of thermally expansive material is incorporated into the slider near the transducer to contribute to the displacement by its own expansion. A temperature control circuit, coupled to the strip of thermally expansive material or to a resistance heating element on the slider, employs a variable current source to control the slider temperature and transducer displacement. Nominal slider operating temperatures can be set to achieve a predetermined transducer flying height, to compensate for variations in flying heights among batch fabricated sliders. Optionally, a temperature sensor can be employed to measure the slider operating temperatures and provide a temperature sensitive input to the temperature control circuit.

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